MARINE DIVISION

Certificate number: 16553/B0 BV
File number: AP 3731
Product code: 3992H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

MARINELEC TECHNOLOGIES
Quimper - FRANCE

for the type of product

SUB-ALARM SYSTEMS

Marine Alarm Announciator - Type: ALTOR 16.

Requirements:
BV Rules for the Classification of Steel Ships.
IEC 60092-504(2001) - IEC 60945(2002) - IEC 61162.

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 03 Mar 2016

For BUREAU VERITAS,

At BV NANTES, on 03 Mar 2011,

Joel Gaurin

BUREAU VERITAS SURVEYORS AT PARIS 1828 NANTES INTERNATIONAL REGISTER

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:
Marine Alarm Announciator - Type: ALTOR 16.

1.1 - Main specifications:

Housing	
Material	aluminium
Enclosure	IP 44
Front face film	Polycarbonate silk-sink printed in 3 languages (French, English, Spanish)
Wiring	2 pluggable connectors (18 terminals)
Power supply	
Voltage range	24 VDC, -25% +30%
Alarms	low voltage + high voltage
Protections	automatic rearming fuse + diode
Input Channels Specifications	
Capacity	16 channels
Input type	normally open/closed dry contacts
Temporisation	programmable from 0 to 99 seconds
Input Inhibition	possible by other input channel, programmable with PC software only
Line Monitoring	open line and short-circuit detection for each channel
Max. Cable Length	200 m
Cable to be used	marine shielded pair or multi-wire cables, 0.5 mm² min.
Max. consumption per channel	20 mA max. I8VCC
Audible Signalisation	Intemal buzzer, 3,5 kHz, 80dB@ 1m
Inputs/Outputs	
"External Ack." input	remote acknowledgement of audible signals
"External Buzzer." output	dry contacts (3A max, to be protected), copy of the internal buzzer state
"RG1" to "RG4" outputs	dry contacts (3A max, to be protected), with following options: NO/NC, ACKNOWLEDGE/NOT ACKNOWLEDGE, 1 GROUP OF 16 / 4 GROUPS of 4
Port RS 485	NMEA type output to connect other systems (V .D.R, monitoring...)
Port RS 232	PC configuration software connection

1.2 - Software Version: V1.0 (24/11/2005)

2. DOCUMENTS AND DRAWINGS:
MARINELEC Technologies:
- Manual for installation and use indice V0.
- ALTOR16_Versions_Soft, Document Version 0.

3. TEST REPORTS:
KENTA: Test report N° 203871 dated Oct. 2005.
EMITECH:
Test report N° RQ-05-61046/A dated 11/Jul./2005.
Test report N° RQ-05-61046/1/A dated 11/Jul./2005.

4. APPLICATION / LIMITATION:
4.1 - BUREAU VERITAS Rules and Regulations for the Classification of Steel Ships.
4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
4.3 - One detailed alarm list per zone shall be posted in the close proximity of the panel.
4.4 - This sub-alarm system shall be used for alarm monitoring only.
4.5- The equipment, once installed on board ship, is to be tested in accordance with the above referred Regulations under the supervision of a Society's Surveyor.
4.6 - Only Hardware and Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The **Marine Alarm Announciator** , **ALTOR 16** are to be manufactured, examined and tested by **MARINELEC TECHNOLOGIES** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **MARINELEC TECHNOLOGIES** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **MARINELEC TECHNOLOGIES** has declared to Bureau Veritas that the type of product described in this certificate may be manufactured at the following production site:

MARINELEC TECHNOLOGIES
13 Rue Alfred Le Bars
29000 Quimper
FRANCE

6. MARKING OF PRODUCT:

6.1 - Trade name
Date of manufacture and serial number,
Equipment type or model identification under which it was type-tested.

6.2 - The title and version of each software element included in the installed software system shall be either marked or displayed on command on the equipment.

7. OTHERS:

7.1 - This approval is given with the understanding that the Society reserves the right to require check tests to be carried out on the units at any time, and that:

MARINELEC TECHNOLOGIES
13 Rue Alfred Le Bars
29000 Quimper
FRANCE

will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 16553/A0 BV issued on 17 Feb. 2006 by the Society.

***** END OF CERTIFICATE *****

MARINE DIVISION

Numéro de certificat : 19930/B0 MMF
Numéro de dossier : AP 3831
Code produit : A0906F

Ce certificat n'est pas valable lorsque presenté sans les pages suivantes comprenant au moins 7 paragraphes

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CERTIFICAT D'APPROBATION DE TYPE

Agissant dans le cadre de sa notification par les Autorités Maritimes Françaises selon les dispositions prévues par l'Article 310-1.02 du Règlement annexé à l'Arrêté du 23 novembre 1987 modifié, BUREAU VERITAS atteste avoir vérifié la conformité de la conception du matériel ou matériau désigné ci-après vis-à-vis des dispositions applicables des exigences énumérées ci-dessous

Ce certificat est délivré à

MARINELEC TECHNOLOGIES

Quimper - FRANCE

pour le type de produit

FLOODING DETECTION AND ALARM SYSTEM - DISPOSITIF DE DETECTION ET D'ALARME D'ENVAHISSEMENT

Type: ALTOR 8

Exigences :
Réglementation Française/French Regulations, Arrété du 23 Novembre 1987, Comme modifié/As amended
Divisions: 310 & 361
Divisions: 227 & 226 Articles/Regulations: 227-2.09 & 226-3.07.

Ce certificat est valable jusqu'au : 30 Nov 2017

Pour BUREAU VERITAS,

A BV NANTES, le 30 Nov 2012,

Joel Gaurin

BUREAU VERITAS SURVEYORS AT PARIS 1828 NANTES INTERNATIONAL REGISTER

Ministère chargé de la Mer

Ce certificat est valable jusqu'à la date indiquée ci-dessus, sauf s'il est annulé ou révoqué, pourvu que les conditions indiquées dans la(les) page(s) suivante(s) soient respectées et que le produit reste satisfaisant en service. Ce certificat n'est plus valable si le fabricant effectue des changements ou des modifications du produit approuvé, qui n'auraient pas été notifiés à BUREAU VERITAS et acceptés par écrit par BUREAU VERITAS. Si les Règlements ou les standards sont modifiés au cours de la période de validité de ce certificat, le(s) produit(s) doit(doivent) être ré-approuvé(s) avant d'être placé(s) à bord de navires pour lesquels les modifications sont applicables. La marque de conformité " MMF " ou " MMF/PL " ne peut être apposée par le fabricant sur le(s) produit(s) objet de ce certificat qu'à la condition que les dispositions décrites au paragraphe 5 de ce certificat soient respectées.
Ce certificat est délivré dans le cadre des Conditions Générales de la Division Marine de BUREAU VERITAS disponible sur le site internet www.veristar.com. Toute personne qui n'est pas partie au contrat aux termes duquel ce document est délivré ne pourra engager la responsabilité de BUREAU VERITAS pour les inexactitudes ou omissions qui pourraient y être relevées ainsi que pour les erreurs de jugement, fautes ou négligences commises par le personnel de la Société ou par ses agents dans l'établissement de ce document et dans l'exécution des interventions qu'il comporte.

PROGRAMME D'APPROBATION

1. PRODUCT DESCRIPTION :
1. DESCRIPTION DU PRODUIT :

DISPOSITIF DE DETECTION ET D'ALARME D'ENVAHISSEMENT. ***FLOODING DETECTION AND ALARM SYSTEM***
Type : **ALTOR 8**

Caractéristiques techniques/*Main specifications:*

Enveloppe du Coffret Pupitre/*Housing*	
Matériau/*Material*	aluminium
Indice/*Degree* protection	IP 44
Film face Avant/ *Front face film*	Polycarbonate sérigraphié, textes en 3 langues (français, anglais, espagnol) *Polycarbonate silk-sink printed in 3 languages (French, English, Spanish)*
Raccordement électrique/ *Wiring*	2 connecteurs débrochables 18 points *2 pluggable connectors (18 terminals)*
Alimentation Electrique Principale et de réserve/*Main and Emergency Power supplies*	
Tension/*Voltage range*	24 VDC, -25% +30%
Alarmes/*Alarms*	Tension trop basse / *low voltage*
Protections	Fusible + diode/ *fuse + diode*
Spécifications des voies d'entrée/*Input Channels Specifications*	
Capacité/*Capacity*	8 voies/*channels* à contacts secs/*Dry contacts*
Temporisation	programmable < 30 seconds
Surveillance de ligne/ *Line Monitoring*	détection des ouvertures et court-circuits sur les lignes/ *open line and short-circuit detection for each channel*
Longueur Max. de Ligne/ *Max. Cable Length*	100 m
Câble à utiliser/ *Cable to be used*	Paires ou câble multiconducteur blindées, 0.75 mm² min. Marine shielded pair or multi-wire cables, 0.75 mm² min.
Signalisation sonore/ *Audible Signalisation*	Buzzer interne/*Intemal buzzer*, 3,5 kHz, 80dB@ 1m et/*and* Siréne externe/ External Siren
Sorties auxiliaires - *auxiliary outputs*	
Port RS 485	Sortie de type NMEA pour report vers autres équipements *NMEA type output to connect other systems* (V.D.R, supervision/*monitoring*...)
Software / *Logiciel* version	1.0
Détecteurs de niveaux/*Level sensors*	IP68, types DPBPxxxBV1, DPBSxxxBV1, DVESxxxBV1. (to be compliant with clause 4.3/devra se conformer à la clause 4.3)

2. DOCUMENTS AND DRAWINGS :
2. PLANS DE CONCEPTION et/ ou SPECIFICATIONS :
- Manual for installation and use/*Manuel d'installation et d'utilisation* dated/*daté* 07/2007 filed in/*classé dans* AP 3731.

3. TEST REPORTS :
3. RAPPORTS D'ESSAIS DE TYPE :

3.1 - Test report / *Rapport d'essai* N° :	Division 361
- Dated / *date* :	01/Aug./2007
- Issued by / *délivré par* :	Bureau Veritas
3.2 - Test report / *Rapport d'essai* N° :	R022-QUD-07-103097
- Dated / *date* :	13/Aug./2007
- Issued by / *délivré par* :	EMITECH
3.3 - Test report / *Rapport d'essai* N° :	R022-QUD-07-103097
- Dated / *date* :	01/Aug./2007
- Issued by / *délivré par* :	EMITECH
3.4 - Test report / *Rapport d'essai* N° :	203 894 EMC
- Dated / *date* :	Jun./2007
- Issued by / *délivré par* :	KENTA électronic
3.5 - Type approval certificate N° :	12753/B0 BV
- Dated / *date* :	27 Feb. 2008
- Issued by / *délivré par* :	Bureau Veritas

4. APPLICATION / LIMITATION :
4. APPLICATION / LIMITATION D'UTILISATION :
4.1 - For all Fishing vessels with a length of less than 24 meter / *Navires de pêche d'une longueur inférieure à 24 mètres.*
4.2 - On board installation & Maintenance requirements/*Installation à bord & Exigence de maintenance :*
As per Division 227 regulation 227-2.09 and Division 226 regulation 226-3.07/
Conformément aux articles 227-2.09 de la division 227 et 226-3.07 de la Division 226
4.3 - Only the above flooding control unit and level sensors successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate. /
Ce certificat couvre la centrale de détection d'envahissement et ses détecteurs de niveaux susmentionnés qui ont été testés ensemble avec succès conformément aux règles et normes citées en première page et qui font l'objet d'une déclaration de conformité de la part du fabricant.

5. PRODUCTION SURVEY REQUIREMENTS :
5. EXIGENCES DES INSPECTIONS DE PRODUCTION :
5.1 - The above system is to be manufactured, examined and tested by **MARINELEC Technologies,** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships. / *Le système susmentionné* doit *être fabriqués, examinés et testés par* ***MARINELEC Technologies*** *conformément au type décrit dans ce certificat et suivant le Règlement Bureau Veritas pour la Classification des navires en acier.*
5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **MARINELEC Technologies** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites. / *Les sites de production devront être reconnus par le Bureau Veritas suivant la NR320 pour les produits HBV.A cette fin,* ***MARINELEC Technologies*** *doit prendre les dispositions nécessaires pour que l'expert de la Société puisse effectuer les visites et audits des sites de production.*
5.3 - **MARINELEC Technologies** has declared to Bureau Veritas that the type of product described in this certificate are manufactured at the following production site: / ***MARINELEC Technologies*** *a déclaré au Bureau Veritas que les types de produit décrits dans ce certificat sont fabriqués dans le site de production suivant :*

MARINELEC TECHNOLOGIES
13 Rue Alfred Le Bars
29000 QUIMPER - France

6. MARKING OF PRODUCT :
6. MARQUAGE POUR IDENTIFICATION :

6.1 - Maker's name or trade mark.
- Serial number of the units.
- Equipment type number or model identification under which it was type-tested. /

- Le nom du fabricant.
- Le numéro de type ou l'identification du modèle ayant subi les essais de type.
- Le N° de série de l'élément.

6.2 - Alternatively, the marking may be presented on a display at equipment start- up. /
En variante, le marquage peut être réalisé sous forme d'affichage lors du démarrage du matériel.

6.3 - The title and version of each software element included in the installed software system shall be either marked or displayed on command on the equipment. /
Le titre et la version de chaque élément logiciel inclus dans le système logiciel installé doivent faire l'objet d'un marquage ou d' un affichage à la demande sur le matériel.

6.4 - When the marking and the title and version of the software are displayed only on the display, such information shall also be included in the equipment manual. /
Lorsque le marquage, le titre et la version du logiciel ne sont affichés que sur l'écran, ces informations doivent être incluses dans le manuel du matériel.

6.5 - Mark of conformity: **MMF**
La marque de conformité : ***MMF***

7. OTHERS :
7. AUTRES :

7.1 - This approval is given with the understanding that the Society reserves the right to require check tests to be carried out on the system at any time, and that **MARINELEC Technologies, Quimper - France,** will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the system and the conditions of this approval. /-
Dans le cadre de cette approbation, la Société se réserve le droit d' effectuer des essais par échantillonnage à n' importe quel moment. Le fabricant, **MARINELEC Technologies, Quimper - France,** *accepte la responsabilité d' informer les chantiers de construction ou leurs sous-traitants desconditions d' utilisation et de maintenance du système susmentionné.*

7.2 - This Certificate supersedes the Type Approval Certificate N°19930/A0 MMF issued on 25 Oct. 2007 by the Society / *Ce certificat annule et remplace le Certificat d'Approbation de Type N°19930/A0 MMF émis le 25 Oct. 2007 par la Société.*

***** FIN DU CERTIFICAT *****

MARINE DIVISION

Certificate number: 12753/C0 BV
File number: AP 3115
Product code: 3732H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

MARINELEC TECHNOLOGIES
Quimper - FRANCE

for the type of product

LEVEL CONTROLLERS

DPBP711BVx, DPBP712BVx, DPBS311BVx, DPBS312BVx, DVES01BVx, DVES01SBVx
(x=0 or 1)

Requirements:
BUREAU VERITAS Rules for the Classification of Steel Ships.

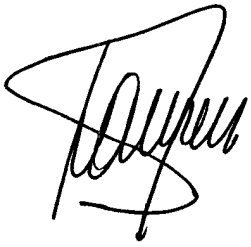
This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 19 Apr 2018

For BUREAU VERITAS,

At BV NANTES, on 19 Apr 2013,

Joel Gaurin



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Level or Bilge water detectors comprising the following models:

DPBP711BVx	Level sensor, one level detected, 1 contact, PVC cylindrical float, circular mounting flange with junction box.
DPBP712BVx	Level sensor, two levels detected, 2 contacts, PVC cylindrical float, circular mounting flange with junction box.
DPBS311BVx	Level sensor, one level detected, 1 contact, stainless steel spherical float, square mounting flange with junction box.
DPBS312BVx	Level sensor, two levels detected, 2 contacts, stainless steel spherical float, square mounting flange with junction box.
DVES01BVx	Bilge water detector, one level detected, 1 contact, PVC cylindrical float, axial fixation by threaded barrel and nuts, with cable.
DVES01SBVx	Bilge water detector, one level detected, 1 contact, stainless steel cylindrical float, axial fixation by threaded barrel and nuts, with cable.

x=1:	Level detector including a resistor for line monitoring by an external device
x=0:	Level detector without resistor
Power Supply:	12/24 VDC
Temperature operating range:	-25°C to +55°C
Protection Index:	IP 68 for all level detectors.

2. DOCUMENTS AND DRAWINGS:

According to documents filed in AP 3115.

3. TEST REPORTS:

EMITECH: Ref. RQ-02-60589 dated 08/10/02, and ref. RQ-02-60589/1 dated 04/11/02.

4. APPLICATION / LIMITATION:

4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.
4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
4.3 - BUREAU VERITAS Environmental Category, **EC Code: 33S/43S.**
4.4 - Usable for the detection of level of diesel oil, not to be used for the detection of level of fuel oil.
4.5 - Not to be used in areas considered as dangerous due to the presence of flammable or explosive gases or vapours.
4.6 - On board passenger ships, the external installations on tank bottom side bulkhead of fuel oil tanks are to comply with the provisions given in Regulation II-2/15.2.6.2.1 of the 1974 SOLAS Convention, as amended.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The **Level sensors** are to be supplied by **MARINELEC TECHNOLOGIES** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.
5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320.
5.3 - **MARINELEC TECHNOLOGIES** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

MARINELEC TECHNOLOGIES
12 Rue Alfred Le Bars
29000 Quimper
FRANCE

5.4 - Each equipment is to be supplied with manual (s) for installation, use and maintenance.

6. MARKING OF PRODUCT:

Maker's name or trade mark,
Serial number of units,
Model identification under which it was type-tested.

7. OTHERS:

7.1 - This approval is given with the understanding that the Society reserves the right to require check tests to be carried out on the above mentioned equipment at any time, and that:

MARINELEC TECHNOLOGIES
12 Rue Alfred Le Bars
29000 Quimper
FRANCE

will accept the responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the Equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 12753/B0 BV issued on 27/02/2008 by the Society.

***** END OF CERTIFICATE *****

MARINE DIVISION

Certificate number: 22922/A0 BV
File number: NAV0/2107/1
Product code: 4442H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

MARINELEC TECHNOLOGIES
Quimper - FRANCE

for the type of product

BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM (BNWAS)

LYNX V3

Requirements:
IMO Res. A.694(17)
IMO Res. MSC.128(75)
IMO MSC/Circ.982
IMO Res. MSC.282(86)
IEC 61162
IEC 60945 (2002)
IEC 62616 Ed.1 (2010)

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 22 Sep 2015

For BUREAU VERITAS,

At BV NANTES, on 22 Sep 2010,

Joel Gaurin

BUREAU VERITAS SURVEYORS AT PARIS 1828 NANTES INTERNATIONAL REGISTER

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM (BNWAS)
Type : LYNX V3

Main specifications:

Housing	
Material	ABS
Ingress Protection	IP 22
Wiring	pluggable connectors (10 and 18 terminals)
Main and Emergency Power supplies	
Voltage range	24 VCC, -25% +30%
Alarms	low voltage
Protections	fuse + diode
Input Channels Specifications	
Capacity	2 "external reset" digital inputs 1 "automatic switching on" digital input 1 "access key" digital input
Temporisation	Programmable < 30 seconds (0, 3, 6 & 10 secondes)
Line Monitoring	open line and short-circuit detection for each channel
Cable to be used	Marine shielded pair or multi-wire cables, 0.75 mm² min
Input-Output NMEA	RS422, protocole NMEA 183
Output Channels Specifications	
Capacity	2 "visible alarm" digital outputs 2 "external buzzer" outputs 1 “system fault" digital output
Input-Output NMEA	1 RS485 input/output serial port (NMEA protocol)
Divers	
Display	LCD Display
" Software" version	1.01
Remote panels specifications	Remote panels specifications 4 "officer alarm" remote panels (LYNX V3 RP) 4 "crew alarm" remote panels (LYNX V3 RP) 4 "emergency call" remote panels (LYNX V3 RPEC)

2. DOCUMENTS AND DRAWINGS :

2.1 - Manual for installation and use: "LYNX_V3_MANU_FR_rev. 1" dated 11/02/2010
2.2 - Drawings/ No BNWAS-WATCH ALARM SYSTEM Rev. 0.0.
2.3 - Drawings No NOMENCLATURE CARTE LYNX_V3 Rev. 0.4 dated 22/09/2009

3. T*EST REPORTS* :

3.1 - Type Test Report N° 203 925 dated 02/10 issued by KENTA Electronic

3.2 - Performance Test Report LYNX V3_CONFORMITY_IEC62616_rev.1.doc dated 10/02/10 issued by KENTA electronic

4. APPLICATION / LIMITATION :

As per requirements stated on first page.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The **LYNX V3** are to be manufactured, examined and tested by **MARINELEC TECHNOLOGIES** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **MARINELEC TECHNOLOGIES** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **MARINELEC TECHNOLOGIES** has declared to Bureau Veritas that the type of product described in this certificate may be manufactured at the following production sites :

MARINELEC TECHNOLOGIES
12 Rue Alfred Le Bars
29000 Quimper
FRANCE

6. MARKING OF PRODUCT *:*

6.1 - Trade name.

6.2 - Date of manufacture and serial number.

6.3 - Equipment type number or model identification under which it was type-tested.

7. OTHERS :

This approval is given with the understanding that the Society reserves the right to require check tests to be carried out on the units at any time, and that **MARINELEC Technologies, Quimper - France** will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

***** END OF CERTIFICATE *****

MARINE DIVISION

Certificate number: 26602/A0 BV
File number: NAV0/2107/1
Product code: 4442H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

MARINELEC TECHNOLOGIES
Quimper - FRANCE

for the type of product

BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM (BNWAS)

BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM (BNWAS)
LYNX V3+

Requirements:
IMO Res. A.694(17) - IMO Res. MSC.128(75) - IMO MSC/Circ.982 - IMO Res. MSC.282(86), IEC 61162 - IEC 60945 (2002) - IEC 62616 Ed.1 (2010).

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 17 Dec 2016

For BUREAU VERITAS,

At BV NANTES, on 17 Dec 2011,

Joel Gaurin

BUREAU VERITAS SURVEYORS AT PARIS 1828 NANTES INTERNATIONAL REGISTER

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM (BNWAS)

Type : LYNX V3+

1.1 Main specifications:

Housing	
Material	ABS
Ingress Protection	IP 22
Wiring	pluggable connectors (10 and 18 terminals)
Main and Emergency Power supplies	
Voltage range	24 VCC, -25% +30%
Alarms	low voltage
Protections	fuse + diode
Input/Output Channels Specifications	
Capacity	2 "external reset" normaly open dry contact inputs 3 "alarm" digital outputs 1 "visible indication" digital output 1 "access key" digital input 1 output 24VDC
Bus Output	RS485 for LYNX MSI (connection to IR motion detectors LYNX MS-IR or LYNX MS-HF), LYNX REB BUS (1st stage alarm & reset), LYNX B BUS (2nd or 3rd stage alarm), LYNX EC BUS (2nd stage alarm & emergency call)
Output NMEA	RS485, protocole NMEA 183 for Voyage Data Recorder
Cable to be used	Marine type approved cables, 0.5 mm² min for Input/Output Marine type approved cables, 0.75 mm² min for power supply Marine type approved screened twisted pair cables, 0.5 mm² min for serial communication
Divers	
Display	LCD Display
" Software" version	2.00

1.2 List of equipment:

Reference	**Designation**
LYNXV3+	main panel
LYNX KI	password inhibition key-switch panel
LYNX KM	countdown enabling key-switch panel
LYNX MSI	NMEA and motion sensors interface
LYNX RI	relay outputs interface
NMEA MUX	NMEA multiplexer
LYNX RE	reset panel
LYNX REB	reset and buzzer panel
LYNX REB WT	watertight reset and buzzer panel
MS-IR / MS-HF	infrared / infrared + hyperfrequency motion sensor
LYNX REB BUS	RS485 bus reset panel
LYNX REB BUS_F	RS485 bus reset panel, flush mounting
SR	2nd and 3rd stage alarm siren
FL	2nd and 3rd stage alarm red flashing light
SR FL	2nd and 3rd stage alarm combined siren and red flashing light
LYNX B BUS	RS485 bus 2nd and 3rd stage remote alarm panel
LYNX B BUS F	RS485 bus 2nd and 3rd stage remote alarm panel, flush mounting
LYNX EC BUS	RS485 emergency call panel
DIMMER24VDC	Dimming panel

2. DOCUMENTS AND DRAWINGS :
Manual for installation and use: "LYNX_V3+_MANU_FR_rev. 0, dated 20/09/2011

3. TEST REPORTS :
3.1 - EMC Type Test Report N° 106553-611313Cr2011-10-11 dated 14/11/2011 issued by LCIE
3.2 - Environmental Type Test Report N° 106553-611313 dated 05/12/2011 issued by LCIE
3.2 - Performance Test Report LYNX V3+_FUNCTIONNAL TESTS_rev.0 dated 12/09/2011 issued by MARINELEC.

4. APPLICATION / LIMITATION :
As per requirements stated on first page.

5. PRODUCTION SURVEY REQUIREMENTS :
5.1 - The **LYNX V3+** are to be manufactured, examined and tested by **MARINELEC TECHNOLOGIES** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **MARINELEC TECHNOLOGIES** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **MARINELEC TECHNOLOGIES** has declared to Bureau Veritas that the type of product described in this certificate may be manufactured at the following production site:

MARINELEC TECHNOLOGIES
12 Rue Alfred Le Bars
29000 Quimper
FRANCE

6. MARKING OF PRODUCT :
6.1 - Trade name.
6.2 - Date of manufacture and serial number.
6.3 - Equipment type number or model identification under which it was type-tested.

7. OTHERS :
This approval is given with the understanding that the Society reserves the right to require check tests to be carried out on the units at any time, and that **MARINELEC Technologies, Quimper - France** will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

***** END OF CERTIFICATE *****

MARINE DIVISION

Certificate number: 20391/B0 BV
File number: AP 3385
Product code: 4201H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

MARINELEC TECHNOLOGIES
Quimper - FRANCE

for the type of product

ENGINE TELEGRAPHS

ORION V2 Telegraph

Requirements:
BUREAU VERITAS Rules for the Classification of Steel Ships.
IEC 60945 (2002).

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 09 Sep 2018

For BUREAU VERITAS,

At BV NANTES, on 09 Sep 2013,

Joel Gaurin

BUREAU VERITAS SURVEYORS AT PARIS 1828 NANTES INTERNATIONAL REGISTER

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Orion V2 telegraph

Power supply	: 24Vdc, -25% +30%
Power consumption	: 0.3A max
Index of protection	: IP 44

2. DOCUMENTS AND DRAWINGS:

2.1 - Document Ref.: ORION V2 MANU FR C from MARINELEC TECHNOLOGIES dated 22/01/2008.
2.2 - Approval documentation Ref.: ORION_V2_DOC_BV Rev.V0 from MARINELEC TECHNOLOGIES.
2.3 - Conception documentation Ref.: ORIONV2_DOC_CONCEPTION_FR from MARINELEC TECHNOLOGIES.

3. TEST REPORTS:

3.1 - KENTA Electronic Test Report No. 203 902 EMC dated April 2008.
3.2 - IEC 60945 (2002).

4. APPLICATION / LIMITATION:

4.1 - According to BUREAU VERITAS Rules for the Classification of Steel Ships.
4.2 - The equipment fulfills the EMC requirements for installation on the Bridge and Deck Zone.
4.3 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT** and **AUT-IMS.**
4.4 - Each application is to be submitted to the Society for examination.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **MARINELEC TECHNOLOGIES** in compliance with the type described in this certificate.
5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320.
5.3 - **MARINELEC TECHNOLOGIES** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

MARINELEC TECHNOLOGIES
12 Rue Alfred Le Bars
29000 Quimper
FRANCE

6. MARKING OF PRODUCT:

6.1 - Trade name.
6.2 - Date of manufacture and serial number.
6.3 - Equipment type number or model identification under which it was type-tested.

7. OTHERS:

7.1 - This approval is given with the understanding that the Society reserves the right to require check tests to be carried out on the units at any time, and that **MARINELEC Technologies, Quimper - France** will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.
7.2 - This certificate supersedes the Type Approval Certificate N°20391/A0 BV issued on 17 Jun 2008 by the Society.

***** END OF CERTIFICATE *****